



How a lifecourse approach can promote long-term health and wellbeing outcomes for Māori

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Abstract

Lifecourse studies examine ways to prevent ill-health, by determining how issues develop and when there are good periods in the lifecourse to intervene. For this reason, lifecourse findings and longitudinal data are increasingly being used to inform government policies and practice, regarding for whom, when, and how prevention and intervention programmes are implemented.

Māori and Indigenous peoples experience wide and enduring ethnic inequalities across a broad range of outcomes throughout the lifecourse. There has been limited Māori lifecourse research to date. In this paper, we describe current lifecourse approaches being used by Māori researchers and discuss the value of a taking a lifecourse approach for Māori health and wellbeing. We address issues around longitudinal data. In particular, the need for Māori leadership in the collection, analysis, management, and governance of longitudinal data that can be used to inform health and social policy to guide programmes and interventions that support positive Māori outcomes throughout life.

Keywords: Māori health, wellbeing, lifecourse, longitudinal, Indigenous, research methods, Indigenous data sovereignty, administrative data

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Introduction

A lifecourse research approach can provide a basis for understanding how different stages of life impact on health and wellbeing (World Health Organization, 2000). Lifecourse researchers use longitudinal studies and data to examine people's pathways or trajectories through life and the factors that affect those trajectories. Longitudinal studies, as compared to one-off cross-sectional studies, follow the same group of people at multiple time points. Lifecourse researchers focus on the timing, nature, and impact of a broad range of biological, behavioural, socioeconomic, and psychological processes beginning in utero through to adulthood and over generations (Ben-Shlomo & Kuh, 2002; Kuh & Ben-Shlomo, 2004).

Lifecourse epidemiology has become increasingly popular since the 1990s (Heikkinen, 2010) but as a research approach, it is often down-played as "common sense" (World Health Organization, 2000). Yet lifecourse research findings and longitudinal data are increasingly being used to guide government policy; such as for whom, when, and how different types of prevention and intervention programmes should be implemented (Gluckman, 2017). In *Aotearoa* (New Zealand), lifecourse research informs social investment (applying rigorous and evidence-based investment practices to social services) with the aim of supporting long-term wellbeing (Treasury New Zealand, 2017). Based on longitudinal findings, social investment in prevention and intervention efforts earlier in the lifecourse are now considered more effective than dealing with many issues in middle and old age, when ill health and disease drain national medical services and budgets (Hertzman & Power, 2003).

In New Zealand and worldwide, Māori and other Indigenous peoples experience wide and enduring ethnic inequalities across a broad range of outcomes throughout the lifecourse. Lifecourse epidemiology suggests that the future burden of disease for Māori will be considerable, yet early and ongoing interventions to prevent disabilities and lengthen life could circumvent

this (Durie, 2011). To date, there has been very limited Māori lifecourse research despite increasing interest in the potential of a lifecourse research approach to inform interventions that make a difference for Māori.

The purpose of this position paper is two-fold. Firstly, we describe how Māori researchers are currently using a lifecourse approach to examine Māori health and wellbeing and highlight the value of this approach. Secondly, we discuss current issues regarding longitudinal data. In particular, we focus on the need for Māori leadership in the collection, analysis, management, and governance of these data.

Māori Lifecourse Approaches

In *Aotearoa*, Māori researchers are using lifecourse approaches to examine influences on health and wellbeing intergenerationally, from early life to old age. In the following section, we review key examples of this work to illustrate the value of a lifecourse approach for Māori health and wellbeing.

Intergenerational Influences on Health and Wellbeing

A lifecourse approach is consistent with Māori worldviews, which are expansive and long-term in nature, including understandings of health resulting from experiences or exposures throughout life and across generations (Durie, 1998). From a Māori community perspective, the value of a lifecourse approach has long been recognised, is inherent to a Māori worldview, and typifies Māori thinking (Durie, 1998). A key area of emerging work by Māori and other Indigenous researchers is historical trauma, "cumulative emotional and psychological wounding over the lifespan and across generations, emanating from massive group trauma experiences" (Brave Heart, 2003, p.7). For Māori, work is centred on the embodiment (biological expression; Krieger, 2005) of historical trauma through the ongoing intergenerational impacts of colonial oppression on health and wellbeing (Pihama et al., 2014; Wirihihana & Smith, 2014). Initial work by Māori researchers has focussed on positioning historical trauma theory within the *Aotearoa* context (Pihama et al., 2014), describing the effects of historical trauma on Māori wellbeing and Māori community approaches to healing from trauma

(Wirihana & Smith, 2014). While the research on historical trauma is limited and measuring its impacts is challenging (Walters et al., 2011), we highlight this emerging field of research because interconnectedness between past and current generations is emphasised within a Māori worldview. Moreover, historical trauma is increasingly theorised as an important factor influencing the trajectories of Māori throughout life. That is, historical trauma is considered to be a key generational determinant of Māori health and wellbeing across the lifecourse.

The Early Years of Life

One of the major contributions made by lifecourse researchers worldwide has been providing strong evidence of the importance of experiences and exposures in early life in relation to later adult outcomes (Melchior, Moffitt, Milne, Poulton, & Caspi, 2007; Moffitt et al., 2011). A lifecourse approach acknowledges that people's pathways or trajectories through life do not occur in a vacuum, but are strongly influenced by wide-ranging societal forces that affect both the obstacles and the opportunities that individuals face during important periods of their lives (Hertzman & Power, 2003).

Using a lifecourse approach, the *Hapū Ora: Wellbeing in the early stages of life* report (Moewaka Barnes et al., 2013) described ethnic inequalities in birth outcomes (e.g., low birthweight, preterm birth, stillbirth) between Māori and non-Māori. In the report, it was noted that compared to non-Māori, Māori women are at higher risk of having poorer mental health, physical health, and substance exposures during pregnancy. The authors highlighted a lack of research on the lifecourse consequences of these factors for babies, and the long-term impacts of pre- and post-natal programmes.

The Hapū Ora report outlined how a lifecourse approach could inform interventions to reduce birth outcome inequalities and their sequelae for babies throughout their lives (Moewaka Barnes et al., 2013). The report also suggested that reproductive health should be considered within the lifecourse continuum of the mother via better access to quality prenatal care. Investing in long-term approaches that improve conditions for mothers throughout their lives is also important; including strengthening families and

communities, reducing poverty, increasing education, and addressing racism (Lu et al., 2010). Interlinking lifecourse, epigenetics, and social determinant approaches and Māori concepts of pregnancy and wellbeing; the report identified four levels of influence on hapū ora; national and government systems at the macro level, community at the mezzo level, mothers and babies at the micro level, and exosystems (e.g. health services; Moewaka Barnes et al., 2013). The implication being that in combination, these systems impact on the early stages of life and thereby the lifecourse of the baby, and that there are intervention points at each of these levels with roles for government, communities, and *whānau* (extended family).

Beyond the Early Years

Beyond the early years of life, there is a paucity of Māori-led lifecourse research that has followed people from childhood into adulthood. This is despite decades of published research describing health disparities between Māori and non-Māori adults using data collected from large multi-ethnic datasets, health records or cross-sectional health surveys where exposures and outcomes are measured at a single point in time (Ministry of Health, 2013; Statistics New Zealand, 2015). These health disparities result from factors including differentials in access to the determinants of health (e.g., education, employment, housing, income, quality health care), and exposure to adverse circumstances (e.g., racism, experiences with the criminal justice system; Davis et al., 2006; Harris et al., 2012; Robson & Harris, 2007). There is little information, however, about how disparities result from repeated experiences or exposures to risk factors over time.

There are arguably two longitudinal studies that are currently able to generate findings for Māori beyond childhood into later life. The Best Outcomes for Māori: Te Hoe Nuku Roa study and the Life and Living in Advanced Age (LiLACS NZ) study. Te Hoe Nuku Roa is run by Te Pūtahi-a-Toi (the School of Māori Art, Knowledge and Education) at Massey University, and it began in 1994. The study was set up to be a 25-year longitudinal study of Māori households, with a focus on describing characteristics of whānau (Forster, 2003). The LiLACS NZ study follows 421 Māori and 516 non-Māori who are

older than 80 years of age (Dyall et al., 2014). Māori researchers are included within the study's leadership group.

Despite a paucity of Māori longitudinal studies, there is increasing research interest in using a lifecourse approach to examine positive Māori ageing. This is, in part, because a lifecourse approach can inform understandings of how the lives of people in different age groups are shaped by unique historical, economic, and social changes during their lifetimes (Ben-Shlomo & Kuh, 2002). In this way, cohort effects enable the changing lives of individuals to be understood in the context of a changing world. Ageing for older Māori in today's society has been influenced by swift and dramatic changes over the lifecourse including colonisation, rapid urbanisation from the 1950s and 1960s, cultural erosion and revitalisation, technological advancements, and environmental degradation (Edwards, 2010). For Māori, the combination of these factors often results in very different health, socioeconomic and other outcomes in later life to those of non-Māori. A lifecourse approach is, therefore, appropriate for Māori studies of ageing, which are concerned with the cumulative impacts of life events and experiences across the lifespan of older people.

Edwards (2010) investigated positive ageing through Māori eyes, particularly the social aspects of Māori ageing, drawing on Māori knowledge captured in proverbs expressing traditional truths and interviews with Māori elders about their memories and aspirations. The study's results showed that elders, who despite significant challenges in life, enjoyed older age and were contributing members of their whānau, Māori society, and wider society. The study described a number of key determinants of positive ageing for older Māori that are experienced through the lifecourse. Such determinants included affordable, good quality housing; having a secure income; good health; being active; having access to transport; living in the community; social interaction, and access to facilities and services. The capacity to serve others, being valued, having a secure Māori cultural identity, whānau cohesion and wellbeing, and a sense of connection to one's tribal region were also found to be important (Edwards, 2010).

The LiLACS NZ study found that greater use of *te reo Māori* (the Māori language) and cultural engagement were associated with a higher quality of life for older Māori. The researchers described how older Māori are significant repositories of *te reo Māori* and *mātauranga Māori* (Māori knowledge), with elders considered to be the carriers of culture within their communities (Dyall et al., 2014). Moreover, the researchers noted that older Māori can sometimes experience a high degree of expectation and demands placed upon them to fulfil leadership roles within *te ao Māori* (the Māori world).

Findings to date suggest that Māori positive ageing is a lifelong process where an individual's circumstances throughout the lifecourse impact in a cumulative way and manifest in old age. Therefore, to enable positive ageing, individuals must engage in a proactive ageing process whereby compensatory actions are taken in order to overcome the challenges that inevitably arise over the lifetime. Māori positive ageing is not just about older people, but rather concerns all age groups throughout life and should be considered within a wider Māori development strategy. In particular, a lifecourse approach can be utilised as a framework to directly inform planning by Māori collectives. That is, planning centred on positive health and wellbeing from pre-conception to old age; with a focus on strengthening whānau and communities and the achievement of potential.

The Value of a Lifecourse Approach for Māori

Taken together, the work described in this section highlights the value of a lifecourse approach for Māori health and wellbeing in three respects. First, a lifecourse approach is consistent with Māori worldviews that recognise interconnectedness between past, present, and future generations including the intergenerational factors that influence the health and wellbeing of people today. From a Māori viewpoint, the various stages of life are connected and cannot be understood fully in isolation. Therefore, a lifecourse approach lends itself to investigating health and wellbeing from a Māori perspective and for the use of Māori concepts (e.g., *hapū ora*) to guide research. Second, the studies highlight the importance of a lifecourse approach to deepen our understanding of the fundamental drivers of ethnic inequalities in health for Māori,

that is, the determinants of health. This is of particular significance given the enduring nature of ethnic inequalities in Aotearoa. Māori researchers continue to resist superficial explanations of ethnic inequalities that have in the past tended to be victim-blaming and pay little attention to the structural drivers of inequities. Third, a lifecourse approach illuminates how and when to intervene to address longstanding inequities. For example, lifecourse research highlights that good outcomes in later life rely upon programmes and interventions earlier in life to enable social, economic, and cultural advancement.

Longitudinal data

Given the value of a lifecourse approach to supporting positive long-term outcomes for Māori, in addition to the lack of current Māori longitudinal studies, there is much work to be done to enable Māori-led lifecourse research that addresses Māori determined priorities and issues. In the following section, we focus on what longitudinal data are currently available and the need for Māori leadership in the collection, analysis, management, and governance of longitudinal data.

Birth Cohort Studies

Ben-Shmolo and Kuh (2002) describe a lifecourse approach as being paradoxical because it is intuitively obvious, but also empirically complex. An ideal way to conduct lifecourse research is via a longitudinal birth cohort study. While cross-sectional studies are able to identify issues of policy relevance, longitudinal studies can provide information on how issues develop (i.e., the root causes of ill-health), appropriate times in the lifecourse to intervene, and what may help to resolve issues. To do this, lifecourse researchers use epidemiological techniques (e.g., group-based trajectory modelling) that provide powerful ways to test lifecourse models (Ben-Shlomo & Kuh, 2002).

Unfortunately, few researchers have access to birth cohort studies as these are both expensive and very time-consuming to conduct. In New Zealand, there are a few birth cohort studies that include Māori participants, and these have been reviewed previously (Mckenzie & Carter, 2010; Poland & Legge, 2005). In brief, these include the

Dunedin Multidisciplinary Health and Development Study and the Christchurch Health and Development Study that have both been running for more than 40 years (Fergusson, Boden, & Horwood, 2015; Poulton, Moffit & Silva, 2015). Based in the South Island, both studies have small numbers of Māori participants. Due to similarities in their study design, however, there is some potential to use both datasets (i.e., combine the data) to inform some future research. The more recently established Growing up in New Zealand study began in 2009 with the recruitment of expectant mothers in the Auckland and Waikato regions, 18% of whom are Māori (Morton et al., 2013). The study aims to follow nearly 7000 children over time, 24% of whom are Māori (Morton et al., 2012) and has the potential to provide some longitudinal research findings for Māori.

Aotearoa's long-established birth cohort studies are internationally renowned but are also a product of this country's history, set up at a time when little consideration was given to areas of research priority for Māori. This limits their usefulness to focus on Māori-specific areas of research. More recent longitudinal studies (e.g., Te Hoe Nuku Roa, Growing up in New Zealand) have increased proportions of Māori participants, though some issues remain for individual studies. For example, the inclusion of specific age groups only, a lack of equal explanatory power or a focus on individuals as opposed to including Māori collectives. Te Hoe Nuku Roa has sought to address this last point through the recruitment of Māori households rather than individuals. This introduces its own difficulties, however, such as changes in household composition over time and statistical issues (e.g., the unit of analysis). For longitudinal studies that are exclusively Māori or have equal explanatory power, publication of the resulting data will be important to inform policy and practice and to enable a fuller critique of Māori lifecourse research findings.

Administrative Data

In the future, researchers in Aotearoa are also likely to use administrative data and data linkage to follow people longitudinally. Administrative data are routinely collected data and are not primarily gathered for a specific research purpose (e.g., national health information). Data linkage refers to the joining of two or more datasets to

produce a single dataset. Administrative data are already being used by researchers within traditional longitudinal studies as a complementary data source (e.g., Caspi et al., 2016) and can also be used as a unique dataset. The advantages and disadvantages of using administrative data for research purposes have been reviewed in recent articles (Evans, Grella, Murphy, & Hser, 2010; Parrish et al., 2017). For example, administrative data can capture information on an entire population (e.g., census data) versus a small sample of the population. This is important for Indigenous research because large sample sizes enable researchers to have enough statistical power to undertake analyses that focus specifically on Indigenous populations. A disadvantage of using administrative data is that information may not have been collected on outcomes of interest or on confounding variables, or there may be underreporting on sensitive issues (e.g., substance misuse).

In Aotearoa, the Integrated Data Infrastructure (IDI) holds linked administrative data about people and households from a range of government agencies, Statistics NZ surveys and non-government organisations (Statistics New Zealand, 2017). Information on individuals within single datasets is linked to other datasets, and then the information that can identify a person (e.g., names, addresses) is removed (i.e., de-identified data). The IDI includes justice, health, education, benefits and social service, people and communities, population (e.g., census), income and work, and housing data. The IDI is regularly being updated with new datasets.

Indigenous Data Sovereignty

Researchers are already running studies to capitalise on IDI health data in order to influence and support policy and programmes (Teng, Blakely, Ivory, Kingham, & Cameron, 2017). Furthermore, researchers are calling for easier and fuller access to these data to enhance research productivity (Teng, Milne, Walker, & Blakely, 2017). Current developments in technology and computational power will also likely mean that, over time, greater insights are more easily generated. In an era of data integration, analytics and big data, now more than ever, the need for Māori involvement and leadership in the collection, analysis,

management, and governance of data is critical. Historically, Indigenous peoples have been research subjects rather than research leaders. This has resulted in a deficit approach or “victim blame analysis” of Indigenous health and the exploitation of Indigenous peoples, culture, knowledge, and resources (Smith, 2012). In Aotearoa, there is a wealth of data collected within the Official Statistics System by the Government on Māori individuals, whānau, and *imi* (tribes). To date, these data have been primarily used for governmental purposes as opposed to supporting Indigenous development agendas (Kukutai & Taylor, 2016).

Published in 2016, the book *Indigenous Data Sovereignty: Towards An Agenda* was the first of its kind to discuss the issue of data sovereignty from an Indigenous standpoint (Kukutai & Taylor, 2016). The book identified a number of priorities for Māori including ensuring data for and about Māori are protected and safeguarded, Māori involvement in the governance of data repositories and supporting the establishment of Māori data infrastructure including security systems. Increased training opportunities for, and investment in, Māori researchers to build statistical capacity and capability to lead future research is also crucial. Iwi and other Māori groups are taking an increasing interest in the data sovereignty space, as evidenced by the establishment of the Iwi Data Sovereignty Group at the National Iwi Chairs Forum and Te Mana Raraunga, the Māori Data Sovereignty Network.

Data are considered *taonga* or treasures and can be used to support the realisation of the rights of Indigenous peoples (Kukutai & Taylor, 2016). High-quality longitudinal data can provide a basis for research, monitoring, and evaluation and can help researchers to identify processes that may create and maintain inequalities (Moewaka Barnes et al., 2013). By taking a strengths-based approach and moving beyond a focus on simply reducing disparities, longitudinal data can also support the ongoing monitoring of the effectiveness of health policy, services, and other interventions to best ensure that they support Māori health, wellbeing, and potential as Māori.

Future Research

Due to the underrepresentation of Māori in most existing longitudinal studies, future work is

needed to ensure that Māori can benefit equitably from the investment in, and the findings of, Aotearoa's longitudinal research. Moreover, there is a clear need for more Māori lifecourse research. A key rationale for new longitudinal studies is the different life experiences of each generation. The demographic profile of Aotearoa is changing, with Māori being a young and fast-growing segment and increasing as a proportion of the overall population.

Importantly, new investment in Māori longitudinal research would enable the generation of longitudinal data that address Māori priorities, takes into account the lived realities of Māori and substantially impacts on improving outcomes for Māori. Investment would provide an opportunity to embed *Kaupapa Māori* approaches at the beginning of research projects, ensuring Māori participation at all levels (e.g., as research leaders, researchers, and participants). There is a particular need for *Kaupapa Māori* (Pihama, 2010; Smith, 2012) longitudinal studies, that is, longitudinal research that is controlled by Māori, addresses issues at the heart of Māori concerns, prioritises Māori in the study design and interpretation of findings, and is committed to transformative action. These types of studies could help to inform intergenerational planning consistent with the long time horizons of iwi and other Māori collectives. Longitudinal studies require significant government investment. The costs of investing in the collection, analysis, and management of Māori longitudinal data is cost effective, however, because they can inform effective prevention and intervention efforts that result in long-term social, health, and economic benefits for Māori over the lifecourse, and across generations.

Importantly, previous articles have described specific approaches to increase Māori participation in longitudinal research (Dyall et al., 2014; Moewaka Barnes et al., 2013; Paine, Priston, Signal, Sweeney, & Muller, 2013). These include Māori researchers taking leading roles in lifecourse studies; defining what the research questions are, what topics should be examined, what data should be collected, leading analyses that are Māori centred, and determining how the results are interpreted. There should be active community involvement from the beginning of new studies so that longitudinal research is

aligned with Indigenous knowledge and values. These practices help ensure that research findings are useful, relevant, and can support long-term health and wellbeing for Māori (Paine et al., 2013).

In order to maximise the value of a lifecourse approach for Māori research, policy, planning, and action; priority must also be given to articulating a Māori lifecourse perspective. That is, the Māori lifecourse perspective that is inherent to a Māori worldview and is implicit in Māori community development. One example is that a Māori lifecourse approach would not focus solely on individuals, rather individuals would be considered to be embedded within whānau and Māori communities, with responsibilities and roles within their communities. Therefore positive lifecourse outcomes would not only be measured in individual terms, but also in terms of the contributions that a person makes to their whānau and local community. Work to articulate this approach is currently being undertaken by a group of the authors of this paper and will be used to inform future papers.

Conclusion

A lifecourse approach emphasises the need to understand health and wellbeing from a temporal, social, and intergenerational perspective. Therefore, it is consistent with Māori worldviews that are holistic, expansive in nature, and take a long term view; looking across time and lives; spanning generations; and emphasising interrelationships. A lifecourse approach lends itself to a Māori view that each life stage is influenced by preceding stages through the impacts of cumulative advantage and disadvantage over time. By identifying the root causes of inequities for Māori and the best intervention points across the lifecourse, Māori lifecourse research can inform health and social policy aiming to support positive outcomes throughout life. In particular, investing in programmes and interventions that begin in early life to prevent illness and disease in later life and to create environments conducive to good health as Māori. Importantly, a lifecourse approach can be utilised as a framework to directly inform planning for Māori collectives. That is, planning centred on positive health and wellbeing from

pre-conception to old age, with a focus on strengthening whānau and communities and the achievement of potential. There is an underrepresentation of Māori in existing longitudinal studies and the need for longitudinal data that is collected, analysed, managed, and governed by Māori to address Māori determined priorities and issues. Investment is needed for Māori-led longitudinal studies to enable research that can support Indigenous development agendas and long-term positive health and wellbeing outcomes for Māori individuals, whānau, and communities.

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